

REMARKS

This paper is being submitted in response to the Final Office Action mailed April 22, 2004 for the above-referenced application. Applicants respectfully request consideration of the following remarks.

The Office Action maintains that Portier et al., App. Phys. Let. vol. 79, no. 1, July 2, 2001 (hereinafter "Portier") having a prior art date that *postdates* Applicants' priority date is an appropriate reference to show the level of ordinary skill in the art at the time Applicant's invention was made and cites MPEP §2124 in support of this assertion. The Portier reference is cited in every rejection in the Office Action. Specifically, the Office Action directs attention to the "underlined sections" on page 59 of Portier which is the last two paragraphs of the left column and the remainder of the paragraph in the right column on page 59. Applicants submit that Portier et al. is not describing the level of ordinary skill in the art at the time Applicant's invention was made, but is instead describing the results of Portier's study that forms the basis for the Portier paper. For example, the portions underlined by the Examiner include a reference to Table I which is compiled from the results of Portier's study and the majority of the discussion in the underlined portions is prefaced by the words "*In the present study*" (See line 3 of the last paragraph in the left column on page 59 of Portier). It seems readily apparent that the subject matter of Portier to which the Office Action refers is derived from the results presented and described by Portier as part of the purposeful subject of the reference.

Applicants submit that the Office Action is attempting to use the conclusory results of a reference that *postdates* Applicants' priority date as an indication of the knowledge of one of

ordinary skill in the art at the time Applicant's invention was made. The portion of Portier that refers to prior studies (beginning on line 1 of the last paragraph, left column, page 59 of Portier) states as follows: "In previous studies, it has been clearly shown for spin-valve structures that a good texture favors a high exchange-bias field between the AFM and the FM layers." This portion has not been underlined by the Examiner and Applicants respectfully submit that this portion of Portier does not render obvious any of the features of Applicants' present claimed invention. The remaining disclosure of Portier reports on the results uncovered during the Portier study. Applicants submit that the use of these results, which postdate Applicants' priority date, against Applicants' present claimed invention is improper.

In particular, the Office Action utilizes Portier in a rejection that includes a supposition with respect to Applicants' claimed features to indicate relative values of an exchange coupling magnetic field (H_r) of a first magnetic thin film and a anti-ferromagnetic thin film and a coercivity (H_{c2}) of a second magnetic thin film. Despite the fact that such features are arguably not present in the prior art, the Office Action attempts to combine other references with the later disclosure of Portier to inappropriately create the structural features of Applicant's claimed invention based on the supposition on what would have been known by one of ordinary skill according to the later disclosure of Portier. MPEP §2124 does not provide for the use of a postdating reference in this manner.

Accordingly, in view of the above, Applicants respectfully request that the Portier reference, for the portions as utilized in the Office Action, be withdrawn and that all rejections over Portier also be withdrawn.

The rejection of claims 1, 2, 5 and 7-11 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,335,081 to Araki et al. (hereinafter "Araki 1") in view of U.S. Patent No. 6,483,675 to Araki et al. (hereinafter "Araki 2") and further in view of U.S. Patent No. 6,084,405 which is the U.S. equivalent of JP 10-162320 to Suzuki (hereinafter "Suzuki") and Portier is hereby traversed and reconsideration is respectfully requested in view of the above-noted remarks concerning the withdrawal of Portier.

The rejection of claims 3, 4, 6 and 14-16 under 35 U.S.C. 103(a) as being unpatentable over Araki 1 in view of Araki 2, Suzuki, Portier and further in view of U.S. Patent No. 6,127,045 to Gill (hereinafter "Gill") and Park et al., IEEE. Trans. Mag., 35(5), 1999, 2919-2921 (hereinafter "Park") is hereby traversed and reconsideration is respectfully requested in view of the above-noted remarks concerning the withdrawal of Portier.

The rejection of claims 12 and 13 under 35 U.S.C. 103(a) as being unpatentable over Araki 1 in view of Araki 2, Suzuki, Portier and further in view of U.S. Patent No. 5,849,422 to Hayashi (hereinafter "Hayashi") is hereby traversed and reconsideration is respectfully requested in view of the above-noted remarks concerning the withdrawal of Portier.

The rejection of claims 23-26 under 35 U.S.C. 103(a) as being unpatentable over Araki 1 in view of Araki 2, Suzuki, Portier and further in view of U.S. Patent No. 6,519,124 to Redon et al. and U.S. Patent App. No. 2002/0097534 to Sun et al. (hereinafter "Sun") is hereby traversed and reconsideration is respectfully requested in view of the above-noted remarks concerning the

withdrawal of Portier.

The rejection of claim 27 under 35 U.S.C. 103(a) as being unpatentable over Araki 1 in view of Araki 2, Suzuki, Redon, Sun, Portier and further in view of Coehoorn et al., IEEE Trans. Mag., 35(5), 1999, 2586-2588 (hereinafter "Coehoorn") is hereby traversed and reconsideration is respectfully requested in view of the above-noted remarks concerning the withdrawal of Portier.

The rejection of claims 28 and 29 under 35 U.S.C. 103(a) as being unpatentable over Araki 1 in view of Araki 2, Suzuki, Redon, Sun, Portier and further in view of Gill is hereby traversed and reconsideration is respectfully requested in view of the above-noted remarks concerning the withdrawal of Portier.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

Respectfully submitted,
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